

occipital region receives impulses from the nasal half of the eye of the opposite side, and the lateral half of each occipital region receives impulses from the temporal half of the eye of the same side.

This conclusion is in perfect accord with that of Wernicke and Wilbrand, reached by a study of pathological cases. It confutes finally the scheme of Charcot, and demonstrates that a lesion of one occipital lobe must produce bilateral hemianopsia.—*Arch. für Psychiatrie*, xiv., 698-750; and xvi., 151-200.

THE RELATION OF THE GRAY MASSES OF THE NERVOUS SYSTEM TO THE PERIPHERAL ORGANS.—Prof. Alex. Hill has subjected the doctrines of localization to the test afforded by a study of comparative anatomy. In the light of the theory of localization of function, the different regions of the brain are as separable one from another as different organs of the body. This specialization of function must be associated with specialization of structure. If the different regions of the brain have different kinds of work to do, the extent to which they are developed will vary as to the amount of work apportioned to each. One brain receives no sensations of sight, another none of hearing, another none of smell.

If the regions which physiologists regard as the centres of these functions be equally developed, the theory falls. If an obvious distinction in development obtain, it may stand. Any attempt at exact delimitation of areas is impossible, until a method has been invented by which the percentage of superficies of different regions can be obtained in a large number of brains. Accepting this principle, Hill applies it to the ungulate and carnivorous types. Herbivora depend for safety almost entirely upon the eye and upon rapidly repeated, but simple, movements of the limbs. Carnivora depend upon the sense of smell and upon complex co-ordinated movements of the whole body. With great muscularity is associated a large sigmoid gyrus. Animals in whose daily life sensations of smell play a large part present long brains with considerable development of the gyrus hippocampi and of a part of the temporo-sphenoidal lobes. The development of the inner part of the occipital lobes varies with the sense of sight.—*British Medical Journal*, March 14 and 21, 1885.

Prof. Hill seems to be unaware that this line of research has been extensively pursued by Spitzka in this country, and by several German anatomists, the authorities whom he mentions being chiefly English. The subject is one, however, which admits of further research, and it is to be hoped that with the large collection of brains in the Hunterian Museum at his command, the Hunterian professor will obtain and publish more detailed results.

THE MIDDLE PEDUNCLE OF THE CEREBELLUM.—Bechterew finds two systems of fibres passing from the hemisphere of the

cerebellum to the pons, which are distinguished from one another by the fact that they develop in the fœtus at different periods.

1. The cerebral system arises chiefly from the cortex of the posterior lateral and basal parts of the hemisphere, only a few of its fibres coming from the superior parts. It lies in the lateral part of the peduncle, and passes in a diagonal direction from behind forward. It ends in the gray masses of the upper half of the pons, being joined with masses in both lateral portions, the majority of its fibres crossing the median line. From these gray masses new fibres arise, which go upward in the pes of the crus to the cerebrum. Some of these fibres go to the frontal lobes, others to the temporo-occipital lobes, while a few end in the corpora striata.

2. The spinal system arises from the cortex of the superior part of the hemisphere, and in part from the vermiform lobe. It lies beneath the cerebral system in the middle peduncle, and passes diagonally from before backwards, only the most caudad part appearing on the surface of the pons. It ends in the gray masses of both sides of the pons. From these gray masses numerous fibres arise which pass dorsad in the raphé between the lemnisci to the formatio reticularis, where they end by turning laterad into a mass of nerve cells recently discovered by Prof. Flechsig and named by him nucleus reticularis tegmenti pontis. These nuclei lie in the middle third of the pons, between the lemniscus and the posterior longitudinal fasciculus, in the formatio reticularis, on each side of the raphé. The ganglion cells of this nucleus resemble those of the gray masses of the pons, but are larger and are embedded in a thick network of fine fibres. Inasmuch as the formatio reticularis caudad of this nucleus contains many more longitudinal fibres than it does cephalad of the nucleus, and as many of these fibres can be traced (?) into the anterior and antero-lateral columns of the spinal cord, Bechterew considers that the nucleus reticularis has a connection with the cord, and that the system of fibres which terminate in it join the cerebellum with the motor portions of the cord. It is the spinal system of fibres in the middle peduncle which first obtains its medullary sheath—at a time when the pyramidal tracts are the only ones possessing a sheath. He considers this system as a centrifugal tract from the cerebellum to the cord in which co-ordinating impulses may pass to the motor centres. — *Neurolog. Centralbl.*, March 15, 1885.

In advancing this view of the function of the tract, Bechterew seems to overlook the view now generally adopted, that the cerebellum governs co-ordination, not by sending impulses outward to the muscles, but by being the organ in which space relations are received from various sensory organs, and whence they are transmitted to the cerebral centres of motion, in which the true co-ordination takes place.

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THE ORIGIN OF THE SPINAL ACCESSORY NERVE.—Numerous authorities have described a double origin to the XI. nerve, dis-